

What is claimed is:

1. A fuel dispenser that dispenses fuel received from a main fuel piping conduit fluidly coupled to an underground storage tank, comprising:
  - a housing containing a fuel handling component area;
  - an internal fuel piping conduit that is fluidly coupled to the main fuel piping conduit to receive fuel; and
  - a leak collection chamber having a bottom and sides with an open top that is located inside said fuel handling component area and that collects fluid leaked inside said housing.
2. The fuel dispenser of claim 1 further comprising a internal fuel piping conduit located inside said hydraulics area that is fluidly coupled to the main fuel piping conduit wherein said leak collection chamber is located on a first side of said internal fuel piping conduit.
3. The fuel dispenser of claim 1 further comprising a slanted collection plate located inside said hydraulics area that is coupled to a side of said leak collection chamber and to an inside surface of said housing that collects leaked fluid and transports the fluid to said leak collection chamber by gravitational force.
4. The fuel dispenser of claim 3, wherein said internal fuel piping conduit passes through an orifice inside said slanted collection plate.
5. The fuel dispenser of claim 1, further comprising a control system and a scale located underneath said leak collection chamber wherein said scale is coupled to said control system to register the weight of said leak collection chamber.
6. The fuel dispenser of claim 5, wherein said control system sends a signal to a controller when the weight of said leak collection chamber exceeds a threshold weight.

7. The fuel dispenser of claim 6, wherein said control system generates an alarm when the weight of said leak collection chamber exceeds a threshold weight.
8. The fuel dispenser of claim 6 wherein said controller sends a signal to a submersible turbine pump that pumps fuel from the underground storage tank to the main fuel piping conduit to shut down said submersible turbine pump in response to receipt of said signal from said control system.
9. The fuel dispenser of claim 5, wherein said control system correlates a fluid level in said leak containment chamber based on the weight of said leak containment chamber.
10. The fuel dispenser of claim 9, wherein said control system sends a signal to a controller when the fluid level of said leak collection chamber exceeds a threshold fluid level.
11. The fuel dispenser of claim 10, wherein said control system generates an alarm when the fluid level of said leak collection chamber exceeds a threshold fluid level.
12. The fuel dispenser of claim 10 wherein said controller sends a signal to a submersible turbine pump that pumps fuel from the underground storage tank to the main fuel piping conduit to shut down said submersible turbine pump in response to receipt of said signal from said control system.
13. The fuel dispenser of claim 9 wherein said control system determines the rate of increase of the liquid level in said leak containment chamber.
14. The fuel dispenser of claim 13 wherein said control system sends a signal to a controller if said rate of increase in the fluid level of said leak collection chamber exceeds a threshold rate of increase.

15. The fuel dispenser of claim 13, wherein said control system generates an alarm if said rate of increase in the fluid level of said leak collection chamber exceeds a threshold rate of increase.

16. The fuel dispenser of claim 14 wherein said controller sends a signal to a submersible turbine pump that pumps fuel from the underground storage tank to the main fuel piping conduit to shut down said submersible turbine pump in response to receipt of said signal from said control system.

17. The fuel dispenser of claim 1, further comprising a control system and a fluid level sensor located inside said leak collection chamber wherein said fluid level sensor is coupled to said control system to register the fluid level inside said leak collection chamber.

18. The fuel dispenser of claim 17, wherein said control system sends a signal to a controller when the fluid level of said leak collection chamber exceeds a threshold fluid level.

19. The fuel dispenser of claim 18, wherein said control system generates an alarm when the fluid level of said leak collection chamber exceeds a threshold fluid level.

20. The fuel dispenser of claim 18 wherein said controller sends a signal to a submersible turbine pump that pumps fuel from the underground storage tank to the main fuel piping conduit to shut down said submersible turbine pump in response to receipt of said signal from said control system.

21. The fuel dispenser of claim 1 wherein said controller is comprised from the group consisting of a site controller, a tank monitor, and a remote system.

22. The fuel dispenser of claim 1 wherein said housing contains an exterior door that allows removal of said leak collection chamber from said housing.

23. The fuel dispenser of claim 22, wherein said exterior door contains a locking mechanism.
24. The fuel dispenser of claim 22 wherein said internal fuel piping conduit is coupled to a shear valve that contains a shut off latch wherein said leak collection chamber is coupled to said shut off latch such that said shut off latch is activated when said leak collection chamber is removed from said housing.
25. The fuel dispenser of claim 1, further comprising a branch fuel piping conduit fluidly coupled to and between the main fuel piping conduit and said internal fuel piping conduit and that carries fuel to said internal fuel piping conduit, wherein said branch fuel piping conduit contains an inner piping and outer piping that creates an annular space between said inner piping and said outer piping.
26. The fuel dispenser of claim 25, further comprising a shear valve having an annular space that is coupled to said annular space and that couples said branch fuel piping conduit to said internal fuel piping conduit.
27. The fuel dispenser of claim 26, wherein said internal fuel piping conduit contains an inner piping and outer piping that creates an annular space between said inner piping and said outer piping, and wherein said annular space of said internal fuel piping conduit, said shear valve and said branch fuel piping conduit are all fluidly coupled to each other.
28. The fuel dispenser of claim 27, further comprising a main fuel piping conduit that contains an inner piping and outer piping that creates an annular space between said inner piping and said outer piping, wherein said main fuel piping is coupled to said branch fuel piping conduit and carries fuel to said branch fuel piping conduit, and wherein said annular space of said branch fuel piping conduit is coupled to said annular space of said main fuel piping conduit.

29. A method of collecting leaked fluid inside a fuel dispenser, comprising the steps of:

placing a leak collection chamber inside a fuel handling compartment area within a housing of the fuel dispenser; and  
collecting leaked fluid inside said leak collection chamber.

30. The method of claim 29 further comprising removing said leak collection chamber from the housing to discard the leaked fluid.

31. The method of claim 30 further comprising generating an alarm when the fluid level inside the leak collection chamber exceeds a threshold fluid level.

32. The method of claim 31 wherein said step of generating an alarm comprises generating an alarm when the fluid level inside the leak collection chamber exceeds a threshold fluid level.

33. The method of claim 31 wherein said step of generating an alarm comprises generating an alarm when the weight of said leak collection chamber exceeds a threshold weight level.

34. The method of claim 32 further comprising the step of converting the weight of said leak collection chamber into a liquid level inside said leak collection chamber.

35. The method of claim 31 further comprising shutting down a submersible turbine pump that pumps fuel to the fuel dispenser in response to said step of generating an alarm.

36. The method of claim 31 further comprising generating a signal when the fluid level inside the leak collection chamber exceeds a threshold fluid level.

37. The method of claim 36 wherein said step of generating a signal comprises generating a signal when the weight of leak collection chamber exceeds a threshold weight level.
38. The method of claim 36 further comprising shutting down a submersible turbine pump that pumps fuel to the fuel dispenser in response to said step of generating a signal.
39. The method of claim 30 further comprising automatically shutting off a shear valve after said step of removing.
40. The method of claim 39 further comprising replacing said leak collection chamber inside said fuel dispenser after said step of removing and opening said shear valve after said step of replacing.
41. The method of claim 40 further comprising the step of unlocking a door on the exterior of said housing before said step of removing.
42. A fuel dispenser that dispenses fuel received from a main fuel piping conduit fluidly coupled to an underground storage tank, comprising:
- a housing comprising an electronics area and a hydraulics area and having an inside surface and an outside surface wherein said inside surface is further comprised of a first inside surface and a second inside surface located across from said first inside surface;
  - an internal fuel piping conduit located inside said hydraulics area that is fluidly coupled to the main fuel piping conduit;
  - a leak containment chamber located inside said hydraulics area on a first side of said internal fuel piping conduit wherein said leak containment chamber has a first side and a second side located across from said first side and wherein said first side is located proximate said first inside surface of said housing; and
  - a slanted collection plate located inside said hydraulics area that is coupled to said second side of said leak containment chamber and to said

second inside surface of said housing, and comprising an orifice that said internal fuel piping conduit passes through;

said leaked fluid inside said housing falls into said leak containment chamber and falls onto said slanted collection plate and falls into said leak containment chamber by a gravitational pull.